The Imaging Source Helpdesk

Getting started with USB 2.0 CMOS Cameras (22,42 and 72) in Linux

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If you have a CCD camera (DxK 21, 31 or 41) you do not need a firmware update but simply need to tell the driver that it should handle the camera. If you want to know how to do that, please refer to the article "Getting started USB 2.0 Cameras in Linux: DxK 21, DxK 31 and DxK 41"

UDEV Rules for DxK 21, 31 and 41 cameras

The mentioned euvccam-fw tool is for USB 2.0 CMOS camera only. They are:

- DFK 22BUC03
- DMK 22BUC03
- DFK 22AUC03
- DMK 22AUC03
- DFK 22AUC03-F
- DMK 22AUC03-F
- DFM 22BUC03-ML
- DMM 22BUC03-ML
- DFM 22AUC03-ML
- DMM 22AUC03-ML
- DFM 22AUC03-F
- DMM 22AUC03-F
- DMK 42AUC02
- DFK 42BUC02
- DMM 42AUC02-ML
- DFM 42BUC02-ML
- DFK 72BUC02
- DMK 72BUC02
- DFK 72AUC02
- DFK 72AUC02-F
- DMK 72AUC02-F
- DMM 72BUC02-ML
- DFM 72AUC02-ML
- DFM 72AUC02-F
- DMM 72AUC02-F

If you have a different camera model, this guide is not for you.

The board camera models (DxM) use exactly the same firmware as housed (DxK) do.

If you have a kernel <= 3.13 you will have to continue using the legacy solution. This guide is intended to upgrade your camera firmware to a point where it can be used under Linux.

If you use a **DxK 22** model, the new firmware **3017** (or higher) is for Linux and Windows. If this firmware is already in your camera, you do not need to update.

You will need a machine with a recent Linux distribution to follow the steps in this document.

It is advised to only have one camera connected at a time to prevent confusion.

Getting and Building the Firmware Tool

Build the tiscamera project as described in the README.md in the root directory.

```
cd <tiscamera>/build/tools/firmware-update
```

To list all available cameras:

```
sudo ./firmware-update -l
```

To get information about the current state of your camera:

```
sudo ./firmware-update -id <SERIAL>
```

If you have a color camera, select the dfk firmware for your camera model. If you have a monochrome camera, select the dmk firmware for your camera model.

The firmware tool will reject a firmware file that does not match your camera.

For the DFx 72UC cameras use the following command:

```
sudo ./firmware-update -ud <SERIAL> -f ../../../data/firmware/usb2/dfk72uc02_3012.euvc
```

For the DFx 42UC cameras, use the following command:

```
sudo ./firmware-update -ud <SERIAL> -f ../../../data/firmware/usb2/dfk42uc03_3014.euvc
```

Once the firmware update ends successfully your USB2.0 camera will run color under Windows and Linux.

Firmware files:

Camera	Linux	Windows
DFK 22BUC03	dfk22uc03_3017.euvc	dfk22uc03_3017.euvc
DMK 22BUC03	dmk22uc03_3017.euvc	dmk22uc03_3017.euvc
DFK 22AUC03	dfk22uc03_3017.euvc	dfk22uc03_3017.euvc
DMK 22AUC03	dmk22uc03_3017.euvc	dmk22uc03_3017.euvc
DFK 22AUC03-F	dfk22uc03_3017.euvc	dfk22uc03_3017.euvc
DMK 22AUC03-F	dmk22uc03_3017.euvc	dmk22uc03_3017.euvc
DFM 22BUC03-ML	dfk22uc03_3017.euvc	dfk22uc03_3017.euvc
DMM 22BUC03-ML	dmk22uc03_3017.euvc	dmk22uc03_3017.euvc
DFM 22AUC03-ML	dfk22uc03_3017.euvc	dfk22uc03_3017.euvc
DMM 22AUC03-ML	dmk22uc03_3017.euvc	dmk22uc03_3017.euvc
DFM 22AUC03-F	dfk22uc03_3017.euvc	dfk22uc03_3017.euvc
DMM 22AUC03-F	dmk22uc03_3017.euvc	dmk22uc03_3017.euvc
DFK 42AUC03	dfk42uc03_3014.euvc	dfk42uc03_143.euvc
DFM 42BUC03-ML	dfk42uc03_3014.euvc	dfk42uc03_143.euvc
DMK 42BUC03	dmk42uc03_3014.euvc	dmk42uc03_143.euvc
DMM 42BUC03-ML	dmk42uc03_3014.euvc	dmk42uc03_143.euvc
DFK 42AUC03-F	dfk42uc03_af_3014.euvc	dfk42uc03_143.euvc
DMK 42BUC03-F	dmk42uc03_af_3014.euvc	dmk42uc03_143.euvc
DFK 42AUE03	dmk42ue03_4001_uvc.euvc*	n/a
DMK 42AUE03	dmk42ue03_4001_uvc.euvc*	n/a
DFK 42BUE03	dmk42ue03_4001_uvc.euvc*	n/a
DMK 42BUE03	dmk42ue03_4001_uvc.euvc*	n/a
DFK 72AUC02	dfk72uc02_3012.euvc	dfk72uc02_140.euvc
DMK 72AUC02	dmk72uc02_162_uvc.euvc*	dmk72uc02_140.euvc
DFK 72BUC02	dfk72uc02_3012.euvc	dfk72uc02_140.euvc
DMK 72BUC02	dmk72uc02_162_uvc.euvc*	dmk72uc02_140.euvc
DFK 72AUC02-F	dfk72uc02_af_146.euvc	dfk72uc02_146.euvc
DMK 72AUC02-F	dmk72uc02_af_146.euvc*	dmk72uc02_146.euvc
DFM 72AUC02-ML	dfk72uc02_3012.euvc	dfk72uc02_140.euvc
DMM 72AUC02-ML	dmk72uc02_162_uvc.euvc*	dmk72uc02_140.euvc
DFM 72BUC02-ML	dfk72uc02_3012.euvc	dfk72uc02_140.euvc
DMM 72BUC02-ML	dmk72uc02_162_uvc.euvc*	dmk72uc02_140.euvc
DFM 72AUC02-F	dfk72uc02_af_146.euvc	dfk72uc02_146.euvc
DMM 72AUC02-F	dmk72uc02_af_146.euvc*	dmk72uc02_146.euvc

*) Monofirmware only.